



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

## NOTICE OF ALLOWANCE AND ISSUE FEE DUE

09/26/00

BREER BURNS AND DRAIN  
SUITE 8660 SEARS TOWER  
233 SOUTH WACKER DRIVE  
CHICAGO IL 60606

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/289,137	04/08/99	022	SZMAL, B	09/26/00
First Named Applicant	35 USC 154(b) term ext. = 0 Days.			

TITLE OF INVENTION: MICROFLUIDIC EMBRYO AND/OR OOCYTE HANDLING DEVICE AND METHOD

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
3	1201.62820	600-033,000	584	UTILITY	YES	\$605.00
						12/26/00

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

### HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

***IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.***

**PATENT AND TRADEMARK OFFICE COPY**

# Notice of Allowability

Application No.

09/289,137

Examiner

Brian Szmaj

Applicant(s)

BEEBE ET AL.

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

1. ☒ This communication is responsive to the response filed on September 11, 2000.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ The drawings filed on \_\_\_\_\_ are acceptable.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the CERTIFIED copies of the priority documents have been
    1. ☐ received.
    2. ☐ received in Application No. (Series Code / Serial Number). \_\_\_\_\_
    3. ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_
5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

A SHORTENED STATUTORY PERIOD FOR REPLY to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office Action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be available under the provisions of 37 CFR 1.136(a).

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☒ Applicant MUST submit NEW FORMAL DRAWINGS
  - (a) ☐ because the originally filed drawings were declared by applicant to be informal.
  - (b) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review( PTO-948) attached
    - 1) ☐ hereto or 2) ☒ to Paper No. 7.
  - (c) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the examiner.
  - (d) ☐ including changes required by the attached Examiner's Amendment / Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE / SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

## Attachment(s)

- |  |  |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____    |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment         |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9 <input type="checkbox"/> Other   |

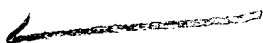
Art Unit: 3736

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven Fallon on September 20, 2000.

2. The application has been amended as follows: In Claim 5, line 2:

--said communication channel-- should read "said fluidic channel" 

### *Allowable Subject Matter*

3. The following is an examiner's statement of reasons for allowance: After reexamining the claims, it was determined that the claims are allowable since no prior art could be found concerning a microfluidic embryo handling device and method comprising: an embryo transport network having a biological medium for movement of the embryos inserted therein, a fluidic channel to facilitate simulated biological rotating of individual embryos moving within the fluidic channel; the transport network is formed in a wafer and the embryo fluidic channel comprises a microchannel in the wafer; a biological medium source for introducing the biological medium into the embryo transport network in a continuous flow manner; a control test embryo

Art Unit: 3736

network fed the biological medium from the biological medium source, the control test embryo network being biologically isolated from the embryo transport network; a gravity controlled biological medium source for introducing the biological medium into the embryo transport network in a continuous flow manner; a formation in a path defined by the communication channel for holding an embryo at a desired location while maintaining flow of the biological medium past an embryo held at the desired location; the formation comprises a constriction; a biological medium source for maintaining flow of the biological medium and for reversing flow of the biological medium to free and embryo held at the desired location; the fluidic channel has a flat bottom; the fluidic channel has a V-shaped bottom; the simulated biological rotating includes rotating and slipping; a controlled biological medium source for introducing the biological medium into the embryo transport network in a continuous flow manner unassisted by electrical stimulus; movement of the embryos in the embryo transport network is unassisted by electrical stimulus; the transport network is sealed from the surrounding environment and the device further comprises an embryo entrance to the transport network and an embryo exit from the transport network; the embryo entrance comprises a hole penetrating a sealing member which seals the transport network, the hole maintaining separation between the biological medium and surrounding environment through surface tension; a removable cover to seal the hole; the hole is funnel shaped; the hole is located in a midstream portion of the transport network; the embryo entrance comprises a well in fluid communication with the transport network; the embryo entrance comprises a hanging drop; the fluidic channel comprises an embryo compartment

Art Unit: 3736

defining a culturing station for an embryo and the device further comprises smaller than embryo diameter fluid flow channel for moving fluid through the embryo compartment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Szmal whose telephone number is (703) 308-3737 and group fax number is (703) 308-0758.

BS



September 21, 2000



Max Hindenburg  
Primary Examiner